

## ABSTRACT

An apparatus to measure micro-forces includes a cantilever palette with a set of cantilever array blocks. Each cantilever array block includes a set of cantilevers, with each cantilever including a set of cantilever fingers surrounded by a frame with frame  
5 fingers. The cantilever fingers and the frame fingers form a diffraction grating. Each cantilever array block is configured to be responsive to a predetermined micro-force, such that cantilevers of the cantilever array block deflect in the presence of the predetermined micro-force, which causes the diffraction grating to diffract light and thereby provide a visual indication of the presence of the predetermined micro-force.

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